STATEMENT OF LEGAL AND FACTUAL BASIS FOR TITLE V PERMIT

General Shale Products, LLC
General Shale Products, LLC - Plant 37
Somerset, Virginia
Permit No. FSO40163

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, General Shale Products, LLC has applied for a Title V Operating Permit for its Sumerset, Orange County, Virginia facility. The Department of Environmental Quality (DEQ) has reviewed the application and has prepared a Title V Operating Permit.

Engineer/Permit Contact:_____ Date:_____

Air Permit Manager:_____ Date:_____

Regional Permit Manager:_____ Date:_____

FACILITY INFORMATION

Permittee
General Shale Products, LLC
P. O. Box 3547
Johnson City, Tennessee 37602

Facility
General Shale Products, LLC - Plant 37
8297 Weyburn Road
Somerset, Virginia 22972

AIRS ID No. 51-137-0001

SOURCE DESCRIPTION

SIC Code: 3251 – Manufacture of face brick.

Facility Description: SIC Code 3251 - Face Brick / Structural Manufacture of brick from shale. The manufacturing process involves mining, grinding, screening, and blending of the raw materials followed by forming, cutting or shaping, drying, firing (or curing), cooling, storage, and shipping of the final product. The raw shale is generally loaded by truck or front-end loader into a receiving hopper and is crushed by an existing primary crusher for initial size reduction. The inherent moisture content of the raw shale ranges from 13 - 15%. The material is then conveyed to an enclosed grinding room, which houses several grinding mills and banks of screens that produce a fine material that is suitable for forming brick. The shale is then conveyed to an enclosed storage area, then used to form bricks in the forming area.

General Shale LLC bricks are formed using a stiff mud extrusion process. The ground raw material is mixed with water and possibly other additives. The material is continuously extruded into soft formed mud. The columns are then treated with various friction or setting materials that apply texture to the surface of the bricks. The columns are cut into soft "green" brick with a wire. The resultant "green" bricks are set on kiln cars.

The "green" or raw bricks loaded on kiln cars are sent to a pre-dryer which utilizes waste heat from the kilns, then to one of three kilns. Each of these are tunnel-type kilns fueled by natural gas. Each dryer/kiln includes a preheat zone, a firing zone, and a cooling zone. Firing of the green bricks involves six steps: the evaporation of free water, dehydration, oxidation, vitrification, flashing, and cooling.

General Shale Products LLC is subject to Title V permitting requirements due to its potential to emit more than 10 tons per year hydrogen fluoride.

Compliance Status: The last two inspections (November 3, 2000, and September 24, 1999) indicate that the

facility is in compliance. General Shale Products LLC is presently in compliance with all applicable air pollution control regulations.

EMISSION UNITS – This table is a representation of all regulated equipment at the facility. The table is included as a reference to be used for informational purposes only, and does not include applicable requirements.

Equipment to be operated consists of:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
Shale Preparation (01-xx)							
01-01	-	McClanahan 24 x 36 Roll Crusher - 1955	50 tons/hr	Wet Material & Enclosure	N/A	PM/PM_{10}	N/A
01-02	-	American Model 384 Grinder – 1955	50 tons/hr	Wet Material & Enclosure	N/A	PM/PM_{10}	N/A
01-03	-	Incla Grinder – 1955	50 tons/hr	Wet Material & Enclosure	N/A	PM/PM_{10}	N/A
01-04	-	Steadman Cage Mill – 1955	50 tons/hr	Wet Material & Enclosure	N/A	PM/PM_{10}	N/A
01-05	-	(8) 5' x 8' Leahy Screen(s) – 1955	50 tons/hr each	Wet Material & Enclosure	N/A	PM/PM_{10}	N/A
01-06	-	(13) Custom belt conveyors - 1955	50 tons/hr each maximum	Wet Material & Enclosure	N/A	PM/PM_{10}	N/A
01-07	01-07	Bulk Sand Storage Silo and Associated Conveyor - 1999	20,000 lb/hr (10 tons/hr); 100 tons capacity	Bin Vent Fabric Filter CP Model 58BF 016	01	PM/PM_{10}	January 26, 1999
01-08	-	Receiving Hopper and Distribution Hopper -1955	50 tons/hr each maximum	Wet Material & Enclosure	N/A	PM/PM_{10}	N/A

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
02	02	"A" Steele Brick Making & Custom Texturing System - 1965	29 tons/hr	Sand texturing process controlled by Flex-Kleen, 4 RA 64 KD fabric filter . Enclosure in building.	02	PM/PM_{10}	N/A
03	03	"B" Steele Brick Making & Custom Texturing - 1965	29 tons/hr	Sand texturing process controlled by Pangborn 500N fabric filter. Enclosure in building.	03	PM/PM_{10}	N/A
04	04A 04B	"A" Dryer/Kiln - Harrop 8-Wide Tunnel Kiln –1965	12.0 tons/hr input 9.75 tons/hr output 26.25 MMBtu/hr	None	N/A	N/A	N/A
05	05A 05B	"B" Dryer/Kiln - Harrop 8-Wide Tunnel Kiln - 1965	12.0 tons/hr input 9.75 tons/hr output 26.25 MMBtu/hr	None	N/A	N/A	N/A
06	06	"C" Dryer /Kiln – Harrop 8-Wide Tunnel Kiln - 1957	12.0 tons/hr input 9.75 tons/hr output 26.25 MMBtu/hr	None	N/A	N/A	N/A
13	13	One Sand Dryer – approximately 1965	0.54 MMBtu/hr natural gas fired. 1.0 tons/hour process rate.	Partial enclosure in a building.	PM	N/A	N/A

EMISSIONS INVENTORY

Emissions are summarized in the following tables:

1. the actual annual emission of criteria pollutants
2. the actual annual emission of hazardous air pollutants

2000 Actual Emissions

Group	Criteria Pollutant Emission in Tons/Year				
Emission Unit	**VOC**	**CO**	**SO_2**	**PM-10**	**NO_x**
01	Not Applicable	Not Applicable	Not Applicable	0.2	Not Applicable
02	Not Applicable	Not Applicable	Not Applicable	0.2	Not Applicable
03	Not Applicable	Not Applicable	Not Applicable	0.08	Not Applicable
04	0.85	42.5	23.7	30.8	12.4
05	0.85	42.5	23.7	30.8	12.4
Total Emissions (01 through 05)	1.7	85	47.4	62.0	24.8
06*	1.0*	51.2*	28.6*	7.9*	14.9*
*Potential emissions for "C" Kiln/Dryer which is currently inactive					

2000 Facility Hazardous Air Pollutant Emissions

Pollutant	Hazardous Air Pollutant Emission in Tons/Year
Hydrogen Fluoride (CAS 7664393)	26.2

EMISSION UNIT APPLICABLE REQUIREMENTS for EXISTING PROCESS EQUIPMENT

01-01 - McClanahan 24 X 36 Roll Crusher (50 tons/hr)
01-02 - American Model 384 Grinder (50 tons/hr)
01-03 - Incla Grinder (50 tons/hr)
01-04 - Steadman Cage Mill (50 tons/hr)
01-05 - (8) 5' x 8' Leahy Screens (50 tons/hr)
01-06 - (13) Custom Conveyors (50 tons/hr)
01-08 - Receiving Hopper and distribution Hopper
02 - "A" Steele Brick Making and Texturing Machine (29 tons/hr)
03 - "B" Steele Brick Making and Texturing Machine (29 tons/hr)
04 - "A" Harrop Dryer / Kiln (12.0 tons/hr input, 9.75 tons/hr output, 26.25 MMBtu/hr)
05 - "B" Harrop Dryer / Kiln (12.0 tons/hr input, 9.75 tons/hr output, 26.25 MMBtu/hr)
06 - "C" Harrop Dryer / Kiln (12.0 tons/hr input, 9.75 tons/hr output, 26.25 MMBtu/hr)
13 - Sand Dryer (0.54 MM Btu/hr, 1.0 ton/hour process rate)

Limitations

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5 Chapter 40 -EXISTING STATIONARY SOURCES; PART II - Emissions Standards; ARTICLE 1 - Visible Emissions and Fugitive Dust/Emissions

9 VAC 5-40-30 - Performance Testing - Existing Sources
9 VAC 5-40-80 - Standard for Visible Emissions
9 VAC 5-40-90 - Standard for Fugitive Dust/Emissions

9 VAC 5 Chapter 40 - EXISTING STATIONARY SOURCES; PART II - Emissions Standards; ARTICLE 4 - Emission Standards for General Process Operations

9 VAC 5-40-260 C - Standard for Particulate Matter (AQCR 1-6)
9 VAC 5-40-280 B - Standard for Sulfur Dioxide

9 VAC 5 Chapter 40 - EXISTING STATIONARY SOURCES; PART II - Emissions Standards; ARTICLE 14 – Emission Standards for Sand and Gravel Operations and Stone Quarrying and Processing Operations

9 VAC 5-40-1840 - Standard for Particulate Matter

9 VAC 5 Chapter 80 – PERMITS FOR STATIONARY SOURCES; PART II – Permit Procedures; ARTICLE 1 – Federal Operating Permits for Stationary Sources

9 VAC 5-80-110 - Permit Content - Federal Operating Permits for Stationary Sources

Description of Applicable Requirements:

9 VAC 5-40-30 - Performance Testing - Existing Sources - This regulation provides the basis for performance test requirements: methods and procedures, data, reporting, conditions as prescribed by the board or EPA (Title V Permit Condition III.C.1.)

9 VAC 5-40-80 - Standard for Visible Emissions – "Unless otherwise specified in this part, no owner or other person shall cause or permit to be discharged into the atmosphere from any affected facility any visible emissions which exhibit greater than 20% opacity, except for one six-minute period in any one hour of not more than 60% opacity. Failure to meet the requirements of this section because of the presence of water vapor shall not be a violation of this section." This standard is applicable to the following emission units: "A" and "B" Brick Making Machines & Texturing equipment (Emission Unit ID Nos. 02, 03), "A", "B", and "C" Harrop Dryer/Kiln exhaust stacks (Emission Unit ID No. 04, 05, and 06). (Title V Permit Condition III.A.6.)

9 VAC 5-40-90 - Standard for Fugitive Dust/Emissions – "No owner or other person shall cause or permit any materials or property to be handled, transported, stored, used, constructed, altered, repaired or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Such reasonable precautions may include, but are not limited to, the following:

1. Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land.

2. Application of asphalt, water or suitable chemicals on dirt roads, material stockpiles or other surfaces which may create airborne dust; the paving of roadways and maintaining them in a clean condition.

3. Installation and use of hoods, fans and fabric filters to enclose and vent the handling of dusty materials. Adequate containment methods shall be employed during sandblasting or other similar operations.

4. Open equipment for conveying and transporting materials likely to create objectionable air pollution when airborne shall be covered or treated in an equally effective manner at all times when in motion.

5. The prompt removal of spilled or tracked dirt or other materials from paved streets and of dried sediments resulting from soil erosion."

This existing regulation citation is applicable to: McClanahan 24 X 36 Roll Crusher; American Model 384 Grinder; Incla Grinder; Steadman Cage Mill; Eight (8) 5' x 8' Leahy Screens; Thirteen (13) Custom Conveyors; Receiving Hopper and Distribution Hopper; Sand Mixer and Sand Weigh Hopper; and Sand Dryer. (Title V General Permit Condition IX.N).

9 VAC 5-40-260 C - Standard for Particulate Matter (AQCR 1-6) – "Interpolation of the data in Table 4-

4A for process weight rates up to 60,000 lb/hr shall be accomplished by use of the following equation: E = 4.10 $P^{0.67}$, where E = emission rate in lb/hr, and P = process weight rate in tons/hr." This existing regulation citation is applicable to: "A" and "B" Steele Brick Making and Texturing Machine (Emission Unit ID No. 02 and 03); "A", "B", and "C" Harrop Dryer/ Kilns (Emission Unit ID No. 04, 05, and 06). (Title V Permit Condition III.A.4).

9 VAC 5-40-280 B - Existing Source Standard for Sulfur Dioxide - Combustion Installations – "No owner or other person shall cause or permit to be discharged into the atmosphere from any combustion installation any sulfur dioxide emissions in excess of 2.64K where K is the actual heat input at total capacity expressed in millions of Btu per hour. General Process Operations emitting sulfur dioxide are limited to the following:

Emission Unit ID	Description	Rated Capacity	SO_2 limit lb/hr
04	"A" Harrop Dryer/Kiln	26.25 MMBtu/hr	69.3
05	"B" Harrop Dryer/Kiln	26.25 MMBtu/hr	69.3
06	"C" Harrop Dryer/Kiln	26.25 MMBtu/hr	69.3

Compliance with the sulfur dioxide emission standard may be demonstrated by demonstrating compliance with the fuel usage requirements as stated in Condition III.A.1, and by record keeping of monthly and annual brick (tons mass) production in each kiln, and by using the following equation: sulfur dioxide emission rate (lbs/hr) = bricks produced (tons/time) x sulfur dioxide emission factor (lbs/ton). The emission factor shall be based on the results of stack test of this facility or similar facilities, or, if these are not available, the appropriate emission factor given in Table 11.3-3 of AP-42 (8/97) may be used. Annual emissions are to be calculated monthly as the sum of each consecutive 12-month period. This existing regulation citation is applicable to "A", "B", & "C" Harrop Dryer/Kilns (Emission Unit ID No. 04, 05, and 06) (Title V Permit Condition III.A.5).

The sand dryer is not subject to 9 VAC 5-40-280 B due to an exemption (9 VAC 5-40-240 C.4) for any combustion unit equipment burning gaseous fuel with a maximum heat input of less than 10 million Btu per hour.

9 VAC 5 - 40-1840 - Existing Source Standard for Particulate Matter for Sand and Gravel Operations and Stone Quarrying and Processing Operations. This condition establishes the authority to require stone process operations to control fugitive dust, and provides for a grain loading standard where it is practical to measure emissions or an allowable particulate limit for such operations.

Compliance with the particulate emission standard may be demonstrated using the following equations as applicable: 1) particulate emission rate (lbs/hr) = bricks produced (tons/hr) x particulate emission factor (lbs/ton); 2) particulate emission rate (lbs/hr) = material processed (tons/hr) x particulate emission factor (lbs/ton). The emission factor for Emission Unit ID 01-01 through 01-05 shall be based on the results of a stack test of this facility or similar facilities, or, if these are not available the appropriate emission factor given in Section 11.3 AP-42 (8/97) may be used. The emission factor for Emission Unit ID 01-06 and 01-08 shall be based on the results

of a stack test of this facility or similar facilities, or, if these are not available the appropriate emission factor given in Section 11.19 AP-42 (1/95) may be used. The emission factor for Emission Unit ID 13 shall be based on the results of a stack test of this facility or similar facilities, or, if these are not available the appropriate emission factor given in Section 11.19.1 AP-42 (11/95) may be used. Annual emissions are to be calculated on a rolling consecutive 12-month basis.

This existing regulation citation is applicable to: McClanahan 24 X 36 Roll Crusher; American Model 384 Grinder; Incla Grinder; Steadman Cage Mill; Eight (8) 5' x 8' Leahy Screens; Fourteen (14) Custom Conveyors; Receiving Hopper and Distribution Hopper; and Sand Dryer. (Emission Unit ID Nos. 01-01, 01-02, 01-03, 01-04, 01-05, 01-06, 01-08, 13) (Title V Permit Condition III.A.3).

9 VAC 5-80-110 and 9 VAC 5-40-1840 – Existing Source Standard for Sand Dryer. This condition specifies the sand dryer (Emission Unit ID No. 13) shall be operated inside an enclosure or similar structure with three or more sides and a roof. This regulation citation is applicable to the sand dryer (Emission Unit ID No. 13). (Title V Permit Condition III.A.8)

9 VAC 5-80-110 - Permit Content - Federal Operating Permits for Stationary Sources Provides the basis for the inclusion of all applicable requirements for all emission units in the major source: requirements from previous permits, requirements of the Virginia Administrative Code, and all requirements that apply to fugitive emissions. Title V permits issued under this regulation include the applicable requirements of:

- Emission limitations and standards (9 VAC 5-80-110B);
- Equipment Specifications and operating parameters (9 VAC 5-80-110C);
- Duration (9 VAC 5-80-110D);
- Monitoring (9 VAC 5-80-110E);
- Record keeping and Reporting (9 VAC 5-80-110F);
- Enforcement (9 VAC 5-80-110G);
- Permit Fees (9 VAC 5-80-110H);
- Emissions Trading (9 VAC 5-80-110I);
- Alternative Operating Scenarios (9 VAC 5-80-110J);
- Compliance (9 VAC 5-80-110K);
- Reopening (9 VAC 5-80-110L);
- Miscellaneous (9 VAC 5-80-110M); and
- Federal Enforceability (9 VAC 5-80-110N).

Title V (Part 70) Permit Conditions Required Under 9 VAC 5-80-110 Are:
III.A.1. – Fuel Limitation (approved fuels for use in three kilns are natural gas and propane.)
III.A.2 – Control Equipment ("A" and "B" Steele brick making texturing equipment shall be controlled by the use of fabric filters.)
III.A.7. - Proper Operation and Maintenance requirements for existing sources.
III.B.1. - Control Equipment (requires existing fabric filters be equipped with a pressure gauge and properly

operated/maintained) and Monitoring for sources as required (included in General / Plantwide section)
III.B.2 - Requires General Shale to keep emission data and operating parameter information
III.B.3 - Requires General Shale to maintain records of required operator training for existing sources.
III.C.1 - Provides the authority for DEQ or EPA to request testing using appropriate methods.
III.D - Reporting for sources as required (included in General / Plantwide section)

Monitoring and Record keeping Conditions

The following monitoring and record keeping requirements for existing sources have been modified to meet Part 70 requirements.

- The permittee (General Shale) will monitor conditions of the plant in order to take precautions to prevent fugitive dust from becoming airborne. (Title V Condition IX.N)

- The permittee will monitor and record the pressure drop across the fabric filters controlling the brick making and texturing equipment (Emission Unit ID No. 02 and 03) (Title V Condition III.B.2).

- The permittee will monitor and record on a weekly basis the visible emission results from the Visible Emission observations made using 40 CFR 60 – Appendix A - Method 22 techniques. If visible emissions are observed, the record shall include the cause of emission and the corrective action taken. Records shall be maintained, on site, stating the date and time of each visible emissions check and whether visible emissions were observed. Visible emission checks are not required during start-ups, shut-downs, or malfunctions. (Title V Condition V.B.1)

- The permittee will keep records of the throughput of shale and/or other materials on a monthly and annual basis. (Title V Condition III.B.2)

- The permittee will keep records of the kiln/dryer use of natural gas and/or propane on a monthly and annual basis. (Title V Condition III.B.2)

- General Shale will monitor the proper operation and maintenance of the following pieces of equipment: McClanahan 24 X 36 Roll Crusher; American Model 384 Grinder; Incla Grinder; Steadman Cage Mill; Eight (8) 5’ x 8’ Leahy Screens; Fourteen (14) Custom Conveyors; Receiving Hopper and Distribution Hopper; “A” and “B” Steele Brick Making and Texturing Machine; “A”, “B”, and “C” Harrop Dryer/ Kilns; and Sand Dryer. They will provide materials necessary to familiarize operators of the manufacturer’s operating instructions, at minimum. (Title V Condition III.B.3)

Record keeping

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include:

These records include monthly and annual material throughput of shale (for the crusher, grinders, screens,

conveyors, hoppers); throughput of brick through the Steele Brick Machine; throughput of brick through the Custom-built brick texturing equipment; and fuel usage and brick production for "A" , "B", and "C" Harrop Kiln/Dryers. Records associated with required operator training will be kept on site for the most recent 5 year period.

Records associated with weekly visible emission observations utilizing 40 CFR 60 Appendix A, Method 22 techniques shall consist of a written log of dates, times, sources, and result of each visible emission observation, as well as a records of the person or persons performing the periodic observations. These records shall be retained on site for the most recent five (5) year period and made available to the DEQ upon request.

The permittee shall maintain records of the required training including a statement of time, place and nature of training provided. The permittee shall have available good written operating procedures and a maintenance schedule for the three (3) kilns. An operation and maintenance plan shall be submitted by the permittee within six months of issuance of this permit for review by the Virginia DEQ, Fredericksburg Office. These procedures shall be based on the manufacturer's recommendations, at minimum. All records required by this condition shall be kept on site and made available for inspection by the DEQ.

Compliance Demonstration

For existing Stone/Sand & Gravel Processing, particulate emission limits are based on Table 4-14 of 9 VAC 5-40-1840. (Emission Unit ID 01-01 McClanahan 24 X 36 Roll Crusher; Emission Unit ID 01-02 American Model 384 Grinder; Emission Unit ID 01-03 Incla Grinder; Emission Unit ID 01-04 Steadman Cage Mill; Emission Unit ID 01-05 Eight (8) 5' x 8' Leahy Screens; Emission Unit ID 01-06 Thirteen (13) Custom Conveyors; Emission Unit ID 01-08 Receiving Hopper and Distribution Hopper; Emission Unit ID 13 Sand Dryer) Compliance with the particulate emission standard may be demonstrated using the following equations as applicable: 1) particulate emission rate (lbs/hr) = bricks produced (tons/hr) x particulate emission factor (lbs/ton); or 2) particulate emission rate (lbs/hr) = material processed (tons/hr) x particulate emission factor (lbs/ton). The emission factor for Emission Unit ID 01-01 through 01-05 shall be based on the results of a stack test of this facility or similar facilities, or, if these are not available the appropriate emission factor given in Section 11.3 AP-42 (8/97) may be used. The emission factor for Emission Unit ID 01-06 and 01-08 shall be based on the results of a stack test of this facility or similar facilities, or, if these are not available the appropriate emission factor given in Section 11.19 AP-42 (1/95) may be used. The emission factor for Emission Unit ID 13 shall be based on the results of a stack test of this facility or similar facilities, or, if these are not available the appropriate emission factor given in Section 11.19.1 AP-42 (11/95) may be used. Annual emissions are to be calculated on a rolling consecutive 12-month basis.

For existing General Process particulate emission limits based on Table 4-4A of 9 VAC 5-40-260, (Emission Unit ID 02 – "A" Steele Brick Machine and Texture Equipment, Emission Unit ID 03 – "B" Steele Brick Machine and Texturing Equipment, Emission Unit ID 04 – "A" Harrop Dryer/Kiln, Emission Unit ID 05 – "B" Harrop Dryer/Kiln, and Emission Unit ID 06 – "C" Harrop Dryer/Kiln) compliance may be demonstrated using the following equation: particulate emission rate (lbs/hr) = bricks produced (tons/hr) x particulate emission factor

(lbs/ton). The emission factor shall be based on the results of a stack test of this facility or similar facilities, or, if these are not available, the appropriate emission factor given in Table 11.3-2 of AP-42 (8/97) may be used. Annual emissions are to be calculated on a rolling consecutive 12-month basis.

For the Existing Source Standard for Sulfur Dioxide - Combustion Installations (Emission Unit IDs 04, 05, and 06 – "A", "B", and "C" Harrop Dryer/Kilns) compliance with the sulfur dioxide emission standard may be demonstrated by demonstrating compliance with the fuel usage requirements as stated in Condition III.A.1 of the Title V permit, record keeping of monthly and annual brick production in each kiln, and by using the following equation: sulfur dioxide emission rate (lbs/hr) = bricks produced (tons/hr) x sulfur dioxide emission factor (lbs/ton). The emission factor shall be based on the results of stack test of this facility or similar facilities, or, if these are not available, the appropriate emission factor given in Table 11.3-3 of AP-42 (8/97) may be used. Annual emissions are to be calculated monthly as the sum of each consecutive 12-month period.

Testing

The permit does not require source tests. Compliance with specific emission limits can be demonstrated using production data and appropriate emission factors. The DEQ and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

The Title V reporting requirements in General Condition IX.C.3 contains the reporting requirements for existing equipment. Records to be reported on March 1 and September 1 of each calendar year are: all deviations from permit requirements for opacity, annual shale / material throughput, and quantity of brick produced. These records are to be made available to DEQ upon request.

Streamlined Requirements

Not Applicable

EMISSION UNIT APPLICABLE REQUIREMENTS - New / Modified Process Equipment and Facility Wide Conditions

01-07 - Bulk Sand/Material Storage Silo (10 tons/hr, 100 ton capacity)

A copy of the new source review permit for the bulk sand storage silo is attached to this document in Appendix A.

Limitations

The following Virginia Administrative Code Regulations and new source review conditions have specific emission

requirements and have been determined to be applicable:

9 VAC 5-50-30 - Performance Testing - New / Modified Sources
9 VAC 5-50-80 - New Source Standard for Visible Emissions
9 VAC 5-50-90 - New Source Standard for Fugitive Dust / Emissions
9 VAC 5-50-260 - Standard for New / Modified Stationary Sources
9 VAC 5-80-10 - Permits & 9 VAC 5-80-10 H - Standards for granting permits
9 VAC 5-80-110 - Permit Content - Federal Operating Permits for Stationary Sources
9 VAC 5-170-160 - Conditions on Approvals
40 CFR 60 Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants

Description of Applicable Requirements (General New Source Regulations):

9 VAC 5-80-110 - Permit Content - Federal Operating Permits for Stationary Sources Provides the basis for the inclusion of all applicable requirements for all emission units in the major source: requirements from previous permits, requirements of the Virginia Administrative Code, and all requirements that apply to fugitive emissions. Permits issued under this regulation include the applicable requirements of:

- Emission limitations and standards (9 VAC 5-80-110B);
- Equipment Specifications and operating parameters (9 VAC 5-80-110C);
- Duration (9 VAC 5-80-110D);
- Monitoring (9 VAC 5-80-110E);
- Record keeping and Reporting (9 VAC 5-80-110F);
- Enforcement (9 VAC 5-80-110G);
- Permit Fees (9 VAC 5-80-110H);
- Emissions Trading (9 VAC 5-80-110I);
- Alternative Operating Scenarios (9 VAC 5-80-110J);
- Compliance (9 VAC 5-80-110K);
- Reopening (9 VAC 5-80-110L);
- Miscellaneous (9 VAC 5-80-110M); and
- Federal Enforceability (9 VAC 5-80-110N).

Title V (Part 70) Permit Conditions - Required by 9 VAC 5-80-110

Limitations
IV.A.1 - Control Equipment (requires emissions from the bulk sand storage silo to be controlled by a fabric filter). (9 VAC 5-50-260)
IV.A.2 - Control Equipment (requires particulate emissions from conveyor associated with the bulk sand storage silo be controlled by covering the portion of the conveyor exposed to outdoor ambient air.)
IV.A.3 - Visible Emissions – (limits visible emissions for new source, bulk sand storage silo, to 10 percent opacity.) (9 VAC 5-50-80)

IV.A.4 – Pollution Control Device Failure Reporting – (requires source to notify DEQ within 4 business hours of occurrence of air pollution control equipment failure or malfunction that causes excess emissions for more than one hour.)
IV.A.5 – Requirement by Reference – (requires source to comply with applicable sections of 40 CFR 60, Subpart OOO. The standard applies to the bulk sand storage silo.)
V.A.1 - Fugitive Dust From New and Modified Sources - (requires the source to implement controls to minimize fugitive dust emissions.)

Monitoring and Record keeping
IV.B.1 – Data – (requires source to maintain records of all emission data and operating parameters needed to demonstrate compliance with the permit. Records shall include the annual throughput of sand through the bulk sand storage silo, calculated monthly.)
IV.B.2 – Record keeping of Training – (requires source to maintain records of training and maintain operating procedures and maintenance schedule for the sand storage silo)
V.B.1 – Opacity Periodic Monitoring for Emission Units. (opacity monitoring to be conducted as stated in Facility Wide Conditions) (9 VAC 5-80-110E)
V.B.2 – Maintenance/Operating Procedures – (requires the source to develop a maintenance schedule and maintain records of scheduled and nonscheduled maintenance. Requires source to maintain an inventory of spare parts to minimize air pollution control equipment breakdowns.)
V.B.3 – Monitoring Information – (requires the source to record monitoring information and demonstrate compliance with the terms and conditions of the permit.) (9 VAC 5-80-110F)

Testing
IV.C.1 and V.C.1 – Testing – (provides authority for DEQ or EPA to request testing of the sand storage silo using appropriate methods. Provides authority for DEQ or EPA to request testing of any emissions unit at the facility.)

Reporting
IV.D.1 and V.D.1 – Reporting – (reporting shall be as described in the General Conditions and as in the Facility Wide Conditions of the permit.

Conditions From January 26, 1999, New Source Review Permit

The following new source permit conditions (new source review permit for a bulk sand storage silo and conveyor issued on January 26, 1999) are applicable and are included in the Title V permit:

Condition 3 - Emissions Control – Particulate emissions from the bulk sand storage silo (Emission Unit ID No. 01-07) shall be controlled by a fabric filter. The fabric filter shall be provided with adequate access for inspection.
(9 VAC 5-80-110, 9 VAC 5-50-260, 9 VAC 5-80-10 H, and Condition 3 of January 26, 1999, Permit)

Condition 4 - Emission Control - Particulate emissions from the conveyor associated with the bulk sand storage silo (Emission Unit ID No. 01-07) shall be controlled by covering the portion of the conveyor exposed to outdoor ambient air.
(9 VAC 5-80-110, 9 C 5-50-260, 9 VAC 5-80-10 H, and Condition 4 of January 26, 1999, Permit)

Condition 5 - Visible Emission Limit - Visible emissions from the bulk sand storage silo (Emission Unit ID No. 01-07) and the covered conveyor shall not exceed ten percent (10%) opacity.
(9 VAC 5-80-110, 9 VAC 5-50-80, 9 VAC 5-50-260, 9 VAC 5-50-410, Condition 5 of January 26, 1999, Permit, and section 60.672 (b) of 40 CFR 60, Subpart OOO)

Condition 7 – Requirements by Reference - Except where this permit is more restrictive than the applicable requirement, the permittee shall operate the bulk sand storage silo and associated conveyor in accordance with the applicable sections of the New Source Performance Standards (NSPS) of 40 CFR 60, Subpart OOO. This standard is applicable to the following emission units: Emission Unit ID # 01-07 (Bulk Sand Storage Silo)
(9 VAC 5-50-400, 9 VAC 5-50-410, 9 VAC 5-80-110 and Condition 7 of January 26, 1999, Permit)

Condition 12 – Pollution Control Device Failure – If any phase of the air pollution control technique becomes non-operational for more than one (1) hour, resulting in a violation of any emission limitation condition contained in this section of the permit, the permittee shall cease the affected operation(s) as expeditiously as possible with consideration for employee safety and damage to equipment. The DEQ, Fredericksburg Office shall be notified within four (4) business hours of the occurrence. In addition, the owner shall provide a written statement, within fourteen (14) days, explaining the problem, corrective action taken, and the estimated duration of the breakdown/shut down.
(9 VAC 5-80-110, 9 VAC 5-20-180C, and Condition 12 of January 26, 1999, Permit)

Monitoring and Record keeping

The following monitoring and record keeping requirements have been included in the Title V permit to meet 40 CFR Part 70 requirements:

The permittee will monitor and record on a weekly basis the visible emission results from the Visible Emission Observations made using 40 CFR 60 - Appendix A - Method 22 techniques. If visible emissions are observed, the record shall include the cause of emissions and the corrective action taken. If visible emissions are not corrected, a six-minute Method 9 visible emission evaluation will be performed. Records shall be maintained, on site, stating the date and time of each visible emissions check and whether visible emissions were observed. Visible emission checks are not required during start-up, shut-down, or malfunction. (Title V Condition V.B.1)

The permittee shall maintain records of required training and shall have written operating procedures and a maintenance schedule for the bulk sand storage silo. The procedures will be based on manufacturer's recommendations. (Title V Condition IV.B.2)

The permitee shall record monitoring information necessary to demonstrate compliance with the terms and conditions of the Title V permit. The information shall include: a) the date, place defined in the permit and time of sampling or measurement; b) the date the analysis was conducted; c) the company that performed the analysis; d) the analytical technique used; e) the results of the analysis; and f) the operating conditions at the time of sampling. (Title V Condition V.B.3)

Monitoring and Record keeping Conditions From January 26, 1999, New Source Review Permit

The following monitoring and record keeping requirements in the new source permit are applicable and are included in the Title V permit:

Condition 9 - Data - The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the DEQ, Fredericksburg Office. These records shall include, but are not limited to the annual throughput of sand through the bulk sand storage silo, calculated monthly as the sum of each consecutive twelve (12) month period. These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years.
(9 VAC 5-50-50, 9 VAC 5-80-110 and Condition 9 of January 26, 1999, Permit)

Condition 13 – Maintenance/Operating Procedures - Maintenance/Operating Procedures - In order to minimize the duration and frequency of excess emissions due to malfunctions of process equipment or air pollution control equipment, the permittee shall:

a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance (including air pollution control equipment). These records shall be maintained on site for a period of five (5) years and shall be made available to DEQ personnel upon request.

b. Maintain an inventory of spare parts that are needed to minimize the duration of air pollution control equipment breakdowns.

(9 VAC 5-170-160, 9 VAC 5-80-110 and Condition 13 of January 26, 1999, Permit)

Testing

The permit does not require source tests. Compliance with specific emission limits can be demonstrated using production data and appropriate emission factors. The DEQ and EPA have authority to require testing, if necessary, to determine compliance with an emission limit or standard.

Reporting

The reporting requirements for this section are satisfied by the monitoring and record keeping requirements in this section, by the General Conditions, and by in the Facility-Wide Conditions. Plant wide reporting conditions also

contained in Section IX - General Conditions of this permit.

Streamlined Requirements

The following conditions in the January 26, 1999, new source review permit for a sand storage silo (Emission Unit ID 01-07) have not been included for the reasons provided:

Condition 6

"Visible Emission Evaluations in accordance with 40 CFR part 60, Appendix A, Method 9, shall be conducted on the sand storage silo…." (Not included – Condition has been satisfied. Determined to be in compliance February 2000.)

Condition 8

"Written notification of the date on which 1) construction of the sand storage silo and associated conveyor commenced, 2) anticipated date of initial start-up of the sand storage silo and associated conveyor, 3) actual start-up date of the sand storage silo and associated conveyor, and 4) anticipated date of visible emissions evaluation of the sand storage silo and associated conveyor shall be sent to the DEQ." Copies of items 1) through 3) are to be sent to USEPA Region III." (Not included - Condition has been satisfied.)

Condition 14

"The permit shall become invalid if construction is not commenced within eighteen months…." (Not included - Condition has been satisfied.)

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviation from permit requirements or any excess emissions, including those caused by upsets, within one business day.

The following general conditions have been modified to include monitoring, record keeping and reporting necessary to comply with 40 CFR Part 70 requirements and the requirements of the January 26, 1999, permit:

Title V Condition IX.B - This condition refers to the Board taking action on a permit application. The Board referred to is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by ' 2.1-20.01:2 and ' 10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement NO. 3-2001".

Title V Condition IX.B cites the entire Article(s) that follow:
IX.B.2. Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Permits for Stationary

Sources
IX.B.3. Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Permits for Stationary Sources

Title V Condition IX.B cites the sections that follow:

IX. B.	9 VAC 5-80-80. "Application"
IX.B.2.	9 VAC 5-80-150. "Action on Permit Applications"
IX.B.3.	9 VAC 5-80-80. "Application"
IX.B.4.	9 VAC 5-80-80. "Application"
IX.B.4.	9 VAC 5-80-140. "Permit shield"
IX.B.5.	9 VAC 5-80-80. "Application"

Title V Condition IX.C.3.e – Reports required by 40 CFR 60.676 et seq. and 40 CFR 60.676(f) of NSPS Subpart OOO for the bulk sand storage silo and associated conveyor (Emission Unit ID No. 01.07) shall be sent to the DEQ and EPA. These reports shall include written results of all Method 9 and Method 22 performance tests conducted to demonstrate compliance with opacity standards specified in 60.672(f) and 60.672(e) respectively.

Title V Condition IX.J.2 – Permit Action For Cause – In addition to the regulatory citations shown in the Title V permit, this permit condition is also in Condition 10 of the January 26, 1999, new source review permit. Therefore, the condition is also included in the Title V permit.

Title V Condition IX.L.1 – Duty to Submit Information - In addition to the regulatory citations shown in the Title V permit, this permit condition is contained in Condition 16 of the January 26, 1999, new source review permit. Therefore, the condition is also included in the Title V permit.

Title V Condition IX.Q – Inspection and Entry Requirements - In addition to the regulatory citations shown in the Title V permit, this permit condition is contained in Condition 11 of the January 26, 1999, new source review permit. Therefore, the condition is also included in the Title V permit.

Title V Condition IX.S – Permit Availability - In addition to the regulatory citations shown in the Title V permit, this permit condition is contained in Condition 17 of the January 26, 1999, new source review permit. Therefore, the condition is also included in the Title V permit.

Title V Condition IX.T – Transfer of Permits - In addition to the regulatory citations shown in the Title V permit, this permit condition is contained in Condition 15 of the January 26, 1999, new source review permit. Therefore, the condition is also included in the Title V permit.

Title V Condition IX.V – Permit Revocation or Termination for Cause - In addition to the regulatory citations shown in the Title V permit, this permit condition is contained in Condition 10 of the January 26, 1999, new source review permit. Therefore, the condition is also included in the Title V permit.

FUTURE APPLICABLE REQUIREMENTS

The facility is a major source of hazardous air pollutants (hydrogen fluoride). Maximum achievable control technology (MACT) standards for clay products manufacturing, under 40 CFR Part 63 and 9 VAC 5 Chapter 60, are scheduled for promulgation on November 15, 2000. When this National Emission Standard for Hazardous Air Pollutants (NESHAP) is promulgated, Generals Shale Products LLC may be subject to its requirements.

INAPPLICABLE REQUIREMENTS

Citation	Title of Citation	Description of Applicability
40 CFR Part 60, Subpart 000	Standards of Performance for Nonmetallic Minerals Processing Plants	This rule applies to the bulk sand storage silo (Emission Unit ID No. 01-07) only. The rule establishes particulate and opacity standards for affected units constructed, reconstructed, or modified after August 31, 1983. The remainder of the equipment at General Shale Brick Plant 37 (Emission Unit ID No. 01-01 through 01-08, excluding Emission Unit ID No. 01-07) has been in operation since 1955, and no modification or reconstruction has occurred.
40 CFR Part 60, Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984	The rule establishes standards for VOC emissions from affected storage tanks with a storage capacity equal to or greater than 40 cubic meters. Section 60.110b(d)(2) specifies that Subpart Kb does not apply to pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere. The LPG storage tanks (Emission Unit ID No. 18) at the General Shale Brick Plant 37 are designed to hold LPG, which has a vapor pressure greater than 204.9 kPa. Therefore this rule does not apply.
40 CFR 60 Subpart UUU (40 CFR 60.730 through 60.737)	Standards of Performance for Calciners and Dryers in Mineral Industries	The regulation applies to an affected facility (dryer) constructed, modified or reconstructed after April 23, 1986 (40 CFR 60.730 (c)). Subpart UUU does not apply to the sand dryer (Emission Unit ID No. 13) since the dryer was constructed prior to the specified date. NOTE: Subpart UUU may

Citation	Title of Citation	Description of Applicability
		apply to the dryer should the dryer be modified or reconstructed in the future.

COMPLIANCE PLAN – Based on recent inspections of the facility, the source in compliance.

As stated in Title V condition III.B.3, General Shale would like the opportunity to make available to DEQ a operation and maintenance plan for review. The following language was added to the Condition for the existing Kilns:

"**Training – Operation & Maintenance** - The permittee shall maintain records of the required training including a statement of time, place and nature of training provided. The permittee shall have available good written operating procedures and a maintenance schedule for the three (3) kilns. *An operation and maintenance plan shall be submitted by the permittee within six months of issuance of this permit for review by the Virginia DEQ.* These procedures shall be based on the manufacturer's recommendations, at minimum. All records required by this condition shall be kept on site and made available for inspection by the DEQ.
(9 VAC 5-80-110)

STATE ONLY APPLICABLE REQUIREMENTS - The applicant did not specify State Only requirements.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, record keeping or reporting shall be required for these emission units.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (5-80-720 B)	Rated Capacity (5-80-720 C)
11	Raw Material Storage Piles (moisture content 13 to 15%)	5-80-720 B	PM_{10}	N/A
12	Sand Mixer, Weigh Hopper, and Associated Conveyor (enclosed in a building)	5-80-720 B	PM_{10}	N/A
14	One Kiln Car Vacuum Cleaner	5-80-720 B	PM_{10}	N/A

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (5-80-720 B)	Rated Capacity (5-80-720 C)
15	Diesel Fuel Storage Tank	5-80-720 B	VOC	10,000 Gallon
16	Oil (Lubricating) Tank	5-80-720 B	VOC	6,000 Gallon
17	Texture Sand Processing	5-80-720 B	PM_{10}	5 ton/hr
18	Three 30,000 gallon LPG pressurized tanks	5-80-720 B	PM_{10}	N/A

The citation criteria for insignificant activities are as follows:
9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
9 VAC 5-80-720 B - Insignificant due to emission levels
9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

A public notice regarding the draft permit has been placed in the Thursday, August 2, 2001, edition *of The Orange County Review* newspaper. Public comments will be accepted from August 2, 2001, through close-of-business on September 3, 2001.

APPENDIX A

NEW SOURCE REVIEW PERMIT

For

GENERAL SHALE PRODUCTS, LLC

Dated: January 26, 1999

Registration Number: 40163